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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,454	10/22/2003	Majid Entezarian	065640-0219	4836

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EXAMINER	
GREENE, JASON M	
ART UNIT	**PAPER NUMBER**
1724	

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,454	ENTEZARIAN ET AL.	
	Examiner	Art Unit	
	Jason M. Greene	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-3 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-3 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 29 March 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/29/04;11/12/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. It appears as though Applicants inadvertently omitted the publication date of the DD 74 699 reference in the IDS filed on 29 March 2004. However, since the publication date of the reference was readily available, the Examiner has filed in the publication date on the IDS and the reference has been considered.

Specification

2. The Examiner suggests Applicants update the status of U.S. Application No. 10/363,849 in the first paragraph of the specification. Application 10/363,849 issued as U.S. Patent 6,814,783 B2 on 9 November 2004.

Claims

3. With regard to claim 2, the Examiner has interpreted the phrase "the packed bed" in line 3 as being a bed formed by the plurality of porous inorganic particles. If this interpretation is correct, the Examiner suggests Applicants rewrite the phrase "the packed bed" as "a packed bed of the plurality of porous inorganic particles" to clarify antecedent basis.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Diachuk.

With regard to claim 1, Diachuk discloses a ventilation system comprising a duct (201) configured to channel exhaust from one location to another location, a prefilter (206) configured to remove one or more substances from the exhaust, and a filter (208,209) including a plurality of porous inorganic particles (charcoal, activated alumina), the filter being configured to receive the exhaust from the prefilter and remove additional substances from the exhaust in Figs. 12-14, col. 1, lines 4-38, and col. 7, line 20 to col. 8, line 20.

With regard to claim 3, Diachuk discloses the prefilter (206) comprising two plates (213,216), each plate comprising a plurality of openings (214,217) which are

louvered (213A,213B,126A,216B) and each plate comprising an open area of about 30% to about 50% in Fig. 13 and col. 7, lines 40-60.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Terrel et al.

Terrel et al. discloses a ventilation system comprising a duct (not shown) configured to channel exhaust from one location to another location, a prefilter (20) configured to remove one or more substances from the exhaust, and a filter (22) including a plurality of porous inorganic particles (charcoal), the filter being configured to receive the exhaust from the prefilter and remove additional substances from the exhaust in Figs. 1-3, col. 1, lines 5-34, and col. 3, line 1 to col. 4, line 49.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Diachuk in view of Sanchez et al. and Gamson et al.

Diachuk et al. does not disclose the particle sizes, the porosity of the particles, or the depth of the packed bed formed by the particles.

Sanchez et al. discloses a similar system comprising a filter including a plurality of porous inorganic (activated alumina) particles, wherein the alumina particles have a size of 1/32 inch (0.8 mm) and a porosity of 30% in col. 1, lines 1-55 and col. 20, lines 1-68. While Sanchez et al. does not explicitly recite the porosity of the particles, the porosity can be calculated from the total pore volume of 0.8 cm^3/g (see col. 20, line 7) and the crystal density of skeletal alumina of 3.0 g/cm^3 (see col. 20, lines 66-68). From the total pore volume of 0.8 cm^3/g, the pore density can be calculated as 1 / 0.8 cm^3/g = 1.3 g/cm^3. Therefore, the porosity can be calculated from the crystal density and the pore density to be 1.3 g/cm^3 / (3.0 g/cm^3 + 1.3 g/cm^3) = 0.30 = 30%.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the particle size and porosity of Sanchez et al. into the alumina particles of Diachuk et al. to provide an alumina support having low density and high surface area, macroporosity, mechanical strength and stability, as suggested by Sanchez et al. in col. 1, lines 8-13.

Gamson et al. discloses a similar system comprising a filter including a plurality of porous inorganic (activated alumina) particles, wherein the bed depth of a packed bed formed by the alumina particles is ½ inch (12.7 mm) in col. 2, lines 47-58. The Examiner notes that 12.7 mm is seen as being about 6.35mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bed depth of Gamson et al. into the alumina bed of Diachuk et al. to provide a predetermined volume of alumina particles suitable for the intended application, as suggested by Gamson in col. 2, lines 47-58. Additionally, it

would have been obvious to one of ordinary skill in the art to adjust the depth of the packed bad of alumina particles depending on the desired pressure drop and flow rate of the exhaust.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Diachuk in view of Terrel et al., DiFoggio and Cantoni.

Diachuk et al. does not disclose the particle sizes, the porosity of the particles, or the depth of the packed bed formed by the particles.

Terrel et al. discloses a similar system comprising a filter including a plurality of porous inorganic (charcoal) particles, wherein the charcoal particles have a size of 1/8 inch (3.2 mm) in Figs. 1-3, col. 1, lines 5-34, col. 3, line 1 to col. 4, line 49, and col. 5, lines 37-49.

DiFoggio discloses using activated carbon having a porosity of 60% as an adsorbent in col. 9, lines 41-47.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the particle size and porosity of Terrel et al. and DiFoggio into the charcoal particles of Diachuk et al. to provide adsorbent particles having a desired pore volume and surface area for a specific application, as is well known in the art.

Cantoni teaches a ventilation system comprising a filter (17) including a plurality of porous inorganic (activated carbon) particles, wherein the bed depth of a packed bed

formed by the alumina particles is 20 mm in Fig. 3, col. 1, lines 5-9, and col. 5, lines 1-6. The Examiner notes that the bed depth of 20 mm is seen as being about 6.35 mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bed depth of Cantoni into the charcoal bed of Diachuk et al. to provide a bed suitable for removing fatty constituents and bed odors from the exhaust, as suggested by Cantoni in col. 5, lines 1-6. Additionally, it would have been obvious to one of ordinary skill in the art to adjust the depth of the packed bad of charcoal particles depending on the desired pressure drop and flow rate of the exhaust.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terrel et al. in view of DiFoggio and Cantoni.

Terrel et al. discloses the charcoal particles have a size of 1/8 inch (3.2 mm) in col. 5, lines 37-49.

Terrel et al. does not disclose the porosity of the charcoal particles, or the depth of the packed bed formed by the particles.

DiFoggio discloses using activated carbon having a porosity of 60% as an adsorbent in col. 9, lines 41-47.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the porosity of DiFoggio into the charcoal particles of Terrel et al. to provide adsorbent particles having a desired pore volume and surface area for a specific application, as is well known in the art.

Cantoni teaches a ventilation system comprising a filter (17) including a plurality of porous inorganic (activated carbon) particles, wherein the bed depth of a packed bed formed by the alumina particles is 20 mm in Fig. 3, col. 1, lines 5-9, and col. 5, lines 1-6. The Examiner notes that the bed depth of 20 mm is seen as being about 6.35 mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the bed depth of Cantoni into the charcoal bed of Terrel et al. to provide a bed suitable for removing fatty constituents and bed odors from the exhaust, as suggested by Cantoni in col. 5, lines 1-6. Additionally, it would have been obvious to one of ordinary skill in the art to adjust the depth of the packed bad of charcoal particles depending on the desired pressure drop and flow rate of the exhaust.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Fitch et al. and Brownell et al. '041 references disclose similar systems.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene
Examiner
Art Unit 1724

8/6/05

jmg
August 6, 2005